DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-010746
Date Inspected: 14-Dec-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Clackamas, OR

CWI Name:	M. Gregson, J. Salazar	**CWI Present:**	☑ Yes ☐ No
Inspected CWI report:	☐ Yes ☑ No ☐ N/A	**Rod Oven in Use:**	☐ Yes ☐ No ☑ N/A
Electrode to specification:	☑ Yes ☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No ☐ N/A
Qualified Welders:	☑ Yes ☐ No ☐ N/A	**Verified Joint Fit-up:**	☑ Yes ☐ No ☐ N/A
Approved Drawings:	☑ Yes ☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No ☐ N/A
		Delayed / Cancelled:	☐ Yes ☑ No ☐ N/A

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

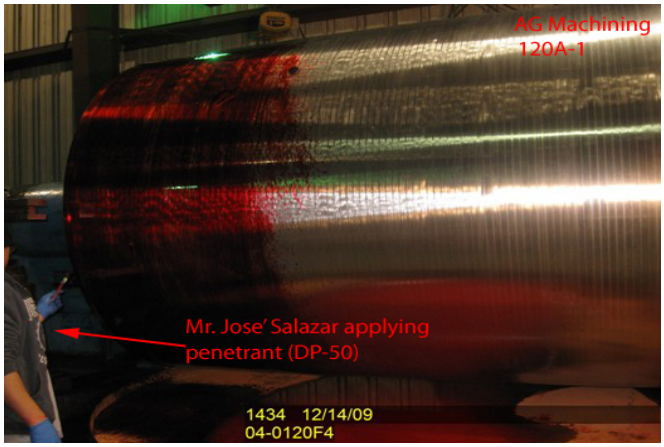
AG Machining (Boring, OR)
Hinge-K Pipe Beam Fuse Assembly 120A-1: 12/14/09
On this date, the QA Inspectors Sean Vance and Joe Adame, arrived at AG Machine shop to observe OIW perform the final penetrant testing (PT) and surface finish testing, on the Fuse 120A-1. The QA Inspectors arrived at approximately 0800 and met with OIW QC Inspector Jose Salazar. Mr. Salazar explained to the QA Inspectors that he had previously arrived at AG, in the a.m., to set up a drip pan underneath the horizontal lathe, required heaters and lighting, prior to the PT testing. Mr. Salazar explained to the QA Inspectors that the final PT testing will be done utilizing OIW's procedure QC-114, sect. 8.0, Water Washable Visible Die Penetrant. The QA Inspectors informed Mr. Salazar that prior to the PT application that final surface finish will be verified utilizing a profilometer. Mr. Salazar explained to the QA Inspectors that he was instructed to perform the PT only and that the profile testing had been previously verified. QA Inspector Sean Vance and Joe Adame explained to Mr.Salazar, that QA Inspectors were not present at the time the surface finish was verified. QA Inspectors were only previously notified that the surface was performed by OIW machinist and PM Bill Pender present and was acceptable, per contract requirements. Mr. Salazar explained that he had brought a profilometer and that the QA Inspectors may use it to verify a finished surface profile. The QA Inspectors verified that the profilometer had a calibration sticker and had been calibrated by OIW on 12/10/09, with a next due date of 12/10/10. The QA

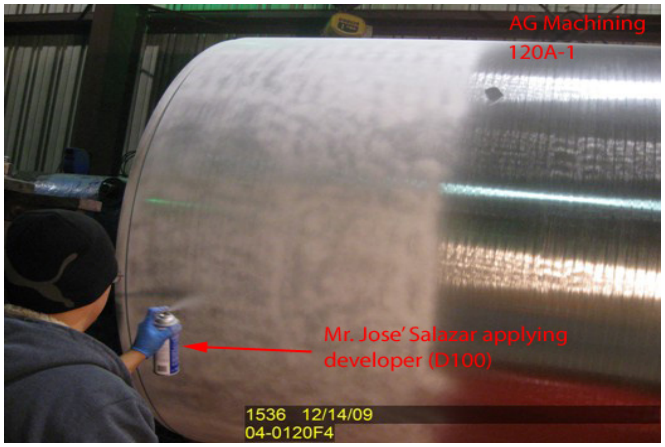
Inspectors performed a preliminary daily calibration on a test piece that was with the profilometer test kit. QA Inspectors noted that the known surface finish on this test piece was 3.10um and after performing the calibration, the surface finish read 3.14um. QA Inspectors noted that the difference was .04um. QA Inspectors Sean Vance and Joe Adame then performed random testing on the surface finish and had recorded reading that averaged .5-.6um and a slightly smoother finish of .4-.5um in the previously repaired and smoothed surfaces on the overlay. QA Inspector noted that the contract requires a surface finish of .8um. QA Inspectors noted that this surface finish appears to be in compliance with the contract requirements. After QA Inspectors performed the surface profile testing at random locations, Mr. Salazar explained that the final PT will be performed, per the above mentioned QC-114 procedure. QA Inspectors witnessed Mr. Salazar cleaning the entire Fuse 120A-1 with acetone, to remove all surface irregularities, that would otherwise mask the surface of unacceptable indications. QA Inspectors then witnessed Mr. Salazar applying heat to the Fuse 120A-1, utilizing 2 propane heaters, to achieve the minimum required pre-heat of 70 degrees Fahrenheit (21 C). QA Inspectors witnessed Mr. Salazar performing pre-heat checks, utilizing a digital thermometer and noted that the surface temperature had reached a temperature of approximately 75 degrees Fahrenheit (24 C). QA Inspectors witnessed Mr. Salazar then applying DP50 penetrant, utilizing a hand pump sprayer, to approximately two-thirds of the entire surface finish. QA Inspectors noted that the penetrant was applied evenly and Mr. Salazar explained that the DP 50 will sit for approximately 25-30 minutes (dwell time). QA Inspectors then verified the dwell time to be approximately 25 minutes and noted that Mr. Salazar had started to wipe the penetrant off with lint free rags. QA Inspectors then witnessed Mr. Salazar applying water, with a hand sprayer , to remove the excess DP50. QA Inspectors then witness Mr. Salazar applying D-100 spray can type developer, over the entire two-thirds surface, in a thin uniform coating. QA Inspectors noted that during the application of the D-100, that no relevant indications were present at the time. After approximately 20 minutes dwell time, QA Inspectors witnessed Mr. Salazar performing visual testing on the tested area. Mr. Salazar then explained to QA Inspectors that no relevant indications were present and was acceptable. QA Inspectors then witnessed Mr. Salazar cleaning off the applied developer with a water hose. At approximately 1200 Mr. Salazar explained to QA Inspectors that he would return to AG, to complete the testing on the remaining one third surface. QA Inspector Sean Vance returned to AG at approximately 1300 and witnessed Mr. Salazar perform the PT. The QA Inspector noted that Mr. Salazar performed the final PT testing, on the remaining one third surface, in the same manner as mentioned above. Mr. Salazar explained to the QA Inspector that the remaining one third was acceptable. QA Inspector noted that Mr. Salazar had performed 100% PT testing on this Fuse 120A-1 and found no rejectable indications. QA Inspector noted that Mr. Salazar appeared to be in compliance with AWS D1.5 visual acceptance criteria and QC-114. See attached pictures below.

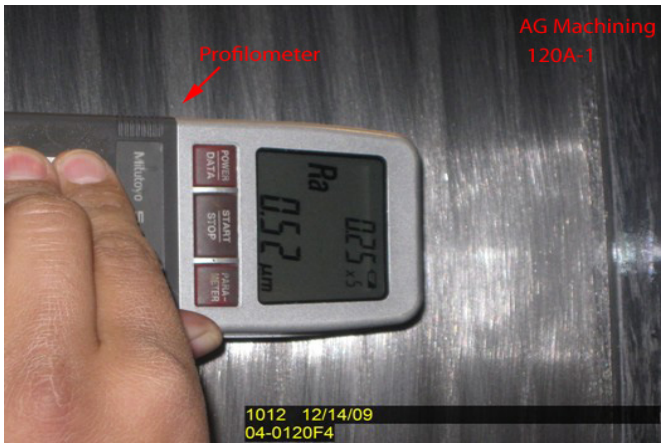
Material, Equipment, and Labor Tracking (MELT)
QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project. The QA Inspector noted that the following were present at Oregon Iron Works: 2 OIW production personnel and 1 QC Inspector.
The QA Inspector observed at AG Machine shop: 1AG machinist, 1 AG supervisor and 1 OIW QC.
The QA Inspector noted that no work was performed at OIW Vancouver paint shop.

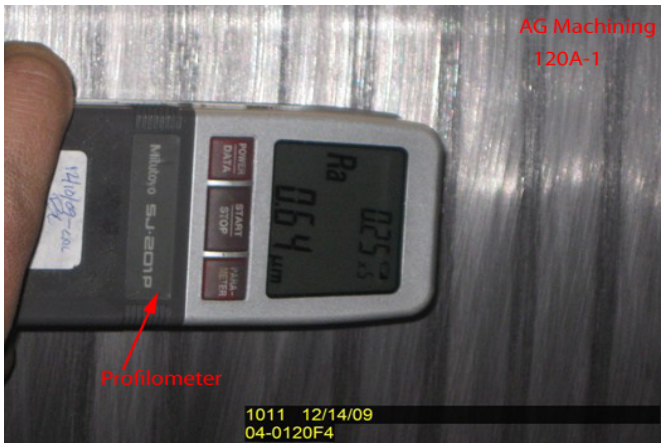
WELDING INSPECTION REPORT

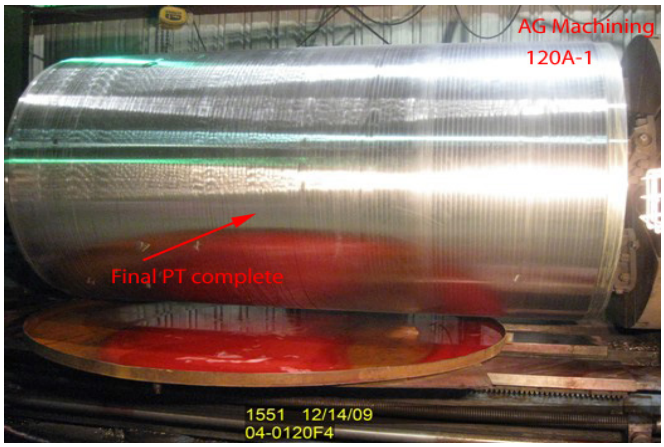
(Continued Page 3 of 4)

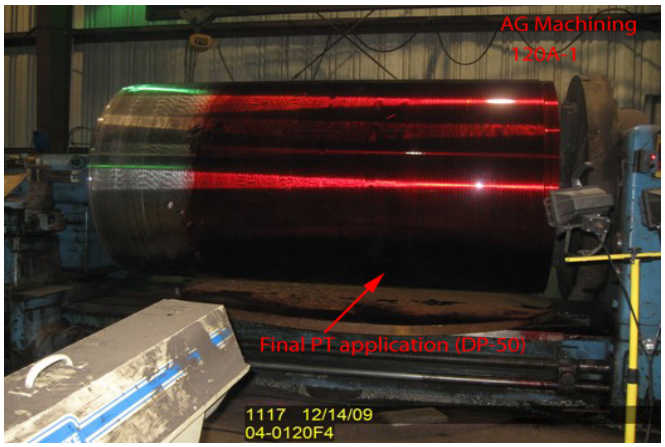


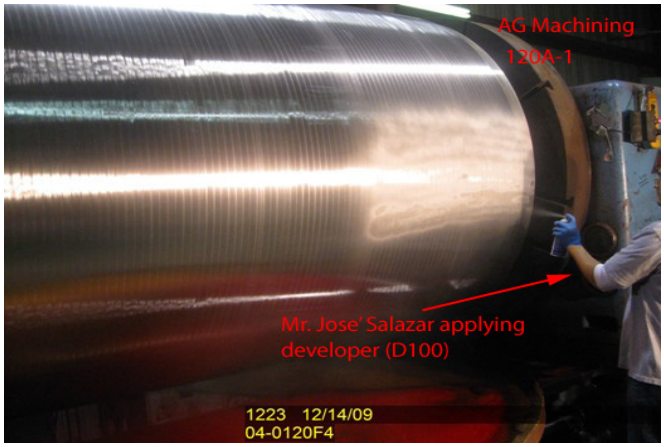












Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer